

REMARKS

Prior to the present response, claims 1-32 were pending. By way of the above amendments, dependent claims 13 and 29 have been rewritten in independent form to respectively include all the features of original independent claims 9 and 25, claims 9 and 25 have been canceled without prejudice or disclaimer, and new claims 33-40 have been added. In addition, the dependencies of claims 10 and 26 have been changed to conform to one of independent claims 13 and 29. Accordingly, claims 1-8, 10-24 and 26-40 currently are pending.

The Lindquist et al. Patent Does Not Disclose
the Combination of All Claimed Features

The Office Action includes a rejection of claims 1-8 and 25-28 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,198,355 to Lindquist et al. This rejection is respectfully traversed.

Independent claim 1 is directed to a phase detector that includes a first input that receives a reference clock signal, a second input that receives a comparison signal, and a comparison circuit that compares a phase of the reference clock signal with a phase of a signal having a frequency that is twice that of the comparison signal. The Office Action, at pages 3 to 4, refers to Figure 2 and column 3, lines 17-27 and lines 33-67 of the Lindquist et al. patent and assert that these portions of the Lindquist et al. patent discloses the phase detector as set forth in claim 1. It is respectfully submitted, however, that neither

the cited portions of the Lindquist et al. patent, nor any other portion of this document, disclose the claimed subject matter. As will become apparent in the following analysis of the Lindquist et al phase detector and claim 1, there exists fundamental differences between the phase detector disclosed in the Lindquist et al. patent and the claimed phase detector.

The Lindquist et al. patent discusses problems in PLL circuits caused by noise signals originating in the reference signal, or noise generated in the phase detector, which is amplified by a factor corresponding to the division ratio of the frequency divider. According to Lindquist et al., it is advantageous to increase the frequency of the reference signal to effectively reduce the division ratio. Lindquist et al. accomplishes this by using a phase detector circuit that triggers on both the rising and falling edges of the reference frequency signal, (V_{ref} , as shown in Fig. 2). In contrast to what is recited in claim 1, however, the frequency of the reference signal (V_{ref}) in the Lindquist et al. patent does not appear to be compared in any way with a phase of a signal having a frequency that is twice that of a comparison signal received by a second input of a phase detector. To the contrary, in the phase detector shown in Fig. 2 of Lindquist et al., only V_{ref} appears to *double* in frequency. At the same time, the frequency of the signal received at input 14 remains unchanged before it is used in a comparison with the signal having a doubled reference signal frequency. Hence, Lindquist et al. does not anticipate claim 1 because it does not disclose a phase detector including, *inter alia*, a comparison circuit that compares a phase of the reference clock signal received at a first input with a phase of a signal having a frequency that is twice that of the comparison signal received at a second input. As such,

the rejection is improper and should be withdrawn because the combination of each any every feature recited in claim 1 is not disclosed in the Lindquist et al. patent.

A similar distinction exists in the method of generating a phase difference signal recited in claim 21. For instance, claim 21 recites a combination including, *inter alia*, the feature of “generating a phase difference signal by comparing a phase of the reference clock signal with a phase of a signal having a frequency that is twice that of the comparison signal.” As pointed out above, however, the phase detector described in the Lindquist et al. patent doubles the frequency of the *reference clock signal* V_{ref} . The phase of this resultant signal (i.e., the signal having a frequency twice that of V_{ref}) is compared with the phase of a signal that is the same as the one received at the input 14. However, the frequency of the signal whose phase is compared with the resultant signal having the doubled reference clock frequency in Lindquist et al. is the same as the frequency of the signal received at the “second input 14.” Hence, the Lindquist et al. patent does not disclose comparing a phase of the reference clock signal with a phase of a signal having a frequency that is twice that of the comparison signal, as claimed. As such, claim 21 is patentable.

Claims 2-8 and 22-24 depend from one of claims 1 and 21 and are therefore patentable at least for the reasons given above, and further for the combinations of additional features recited.

**U.S. Patent No. 6,198,355 Was Commonly Owned at the Time of the
Invention, and Thus Is Excluded as Prior Art under 35 U.S.C. § 103(a)**

The Office Action includes a rejection of claims 13-20 and 29-32 under 35 U.S.C. § 103(a) as allegedly being obvious over a combination of U.S. Patent No. 5,729,179 to Sumi et al. and the Lindquist et al. patent.

Applicants hereby assert that both the Lindquist et al. patent and the present application were subject to an obligation of assignment to Telefonaktiebolaget LM Ericsson at the time of filing the present application. Furthermore the Lindquist et al. patent qualifies as a reference available under section 102(e) because it is a patent that was granted on an application for patent by another filed in the United States before the filing date of present application, and the Lindquist et al. patent is not prior art under Sections 102(a) and 102(b) because Lindquist et al. was not patented before the invention thereof for patent by Applicants.

In view of the foregoing, Applicants assert that the Lindquist et al. patent constitutes subject matter as defined under Section 103(c) and therefore should be excluded as prior art under Section 103(a). Therefore, the rejection of claims 13-20 and 29-32 under 35 U.S.C. § 103(a) should be withdrawn.

Claims 10-12 and 26-28 depend from one of claims 13 and 29, and are therefore patentable at least for the above reasons, and for the combinations of additional features recited.

The Rejection under 35 U.S.C. § 102(b) Based on the Sumi et al. Patent

Claims 9-12 and 25-28 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sumi et al. It is respectfully submitted that this rejection has been obviated in view of the cancellation of claims 9 and 25 without prejudice or disclaimer and the changes made to the dependencies of claims 10-12 and 26-28. As noted above, the rejection of claims 13 and 29 have been overcome pursuant to 35 U.S.C. § 103(c), and claims 10-12 and 26-28 have been changed so that each of these claims either directly or indirectly depends from one of independent claims 13 and 29.

Conclusion

In view of the foregoing, it is respectfully asserted that claims 1-8, 10-24 and 26-32 are patentably distinguishable over the Lindquist et al. patent. Applicants further assert that claims 13-20 and 29-32 are allowable at least because the rejection under Section 103 has been overcome by exclusion of the Sumi et al. patent of as prior art under 35 U.S.C. § 103(a). Accordingly, the rejections of all pending claims under Sections 102 and 103 should be withdrawn. It is respectfully submitted that new claims 33-40 recite subject matter not disclosed in either the Lindquist et al. or the Sumi et al. patents. Hence, these claims also are believed patentable.

The application is believed to be in condition for allowance, and prompt notice of the same is earnestly solicited. If the Examiner believes that a telephone conference with the

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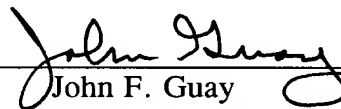
undersigned would expedite passage of the present patent application to issue, he is invited to call the number below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

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By: _____



John F. Guay

Registration No. 47,248

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620